

REMARKS

The last Office Action has been carefully considered.

It is noted that Claims 1-3, 9-11, 17-19 and 20 are rejected under 35 USC 102(b) over the U.S. patent to Raines.

Claims 4-5, 7 and 8 are rejected under 35 USC 103(a) over the U.S. patent to Raines in view of the patent to Trott.

Claim 6 is rejected under 35 USC 103(a) over the U.S. patent to Raines in view of the patent to Trott.

Claim 14 is rejected under 35 USC 103(a) over the U.S. patent to Raines in view of the patent to Hutchins.

Claims 15-16 are rejected under 35 USC 103(a) over the U.S. patent to Raines in view of the patent to Jasch.

After carefully considering the Examiner's grounds for rejection of the claims over the art, applicant amended Claims 1 and 18.

Claim 1 now includes the feature referring to the radii from Claim 9 as shown in Figure 4 of the present application.

Claim 18 now includes the feature referring to a shape of the form-locking element, which is disclosed in Figures 2-4 and on page 6, line 4 of the present application.

The features of new Claims 21-30 are disclosed in the drawings and in the specification.

In particular, the features of Claim 21 are disclosed in Figures 2-4 and on page 6, lines 4 and 25 of the application. The features of Claim 22 are disclosed on page 7, line 4 of the application. The features of Claim 23 can be calculated from the diameter of the centering element and the correlation of the radii of the form-locking element and the centering element disclosed in Figure 4 of the application. The features of Claim 24 are disclosed on page 6, lines 29-32 of the present application. The features of Claim 25 are disclosed on page 3, lines 1-4 of the present application.

The feature of Claim 26 is disclosed in Figures 3 and 4. The features of Claim 27 can be derived from the showing of Figures 1-4. The features of Claim 28 can be derived from the showing of Figures 1-4 and defined in Claim 6. The features of Claim 29 are disclosed on page 3, lines 1-4. The

features of Claim 30 are shown in Figures 1-3. The features of Claim 31 are shown in Figure 1.

Turning now to the Examiner's grounds for rejection of the claims, and in particular to the patent to Raines, it is respectfully submitted that the patent to Raines discloses an attachment assembly to secure a saw blade (16, 46, 56, 66) to a shaft (12) of an oscillating saw (10). The attachment assembly comprises various form-locking elements (34, 84, 85, 106, 114) which are located radially outward of a centering element (27, 80) (see Raines, Figures 5, 7, 9, 10, 12, 17 and 20 as well as the specification).

In contrast, new Claim 1 of the patent application provides a device having a centering element (10) and at least one form-locking element (12) for fastening an axially mountable tool (14) to a drive shaft (16) of a hand-held power tool (28), wherein the tool (14) is drivable in an oscillating manner. The centering element (10) is provided for centering the tool (14) relative to said drive shaft (16) and the form-locking element (12) is provided for defining a rotary position of the tool (14) relative to the drive shaft (16). The form-locking element (12) is located radially outside of the centering element (10) and a radius (18) which is associated with one position of the form-locking element (12) is eight times as large as a radius (20) of the centering element (10).

The patent to Raines does not disclose that a radius which is associated with one position of one of the form-locking elements (34, 84, 85, 106, 114) is eight times as large as a radius of the centering element (27, 80).

It is believed to be clear that the new features of the present invention which are now defined in amended Claim 1 are not disclosed in the patent to Raines.

The patents to Trott, Hutchins and Jasch have been considered as well. None of these references disclose that a radius which is associated with one position of a form-locking element is eight times as large as a radius of a centering element. The Trott reference, the Hutchins et al reference as well as the Jasch reference do not teach the new features of Claim 1.

As for the new features of the present invention as defined in Claim 18, the patent to Raines discloses an attachment assembly to secure a saw blade (16, 46, 56, 66) to a shaft (12) of a oscillating saw (10). The disclosed saw blades (16, 66) comprise various form-locking elements (44, 72) which are located radially outward of a centering element (40, 57, 70) (see Raines, Figures 7, 9 and 10 as well as column 4, lines 19 to 68).

Contrary to Raines, new Claim 18 defines a tool (14), which comprises a centering element (10) and a form-locking element (12) for axial

mounting and fastening onto a drive shaft (16) of a hand-held power tool (28), wherein the drive shaft (16) is drivable in oscillating fashion. The centering element (10) is intended for centering the tool (14) relative to the drive shaft (16) and the form-locking element (12) is intended for defining a rotary position relative to the drive shaft (16). The form-locking element (12) is located radially outside of the centering element (10) and the form-locking element (12) has a quadrangular cross section.

None of the tools (16, 46, 56, 66) with form-locking elements (44, 72) disclosed in the Raines reference have a quadrangular cross section. Rather, they are purposefully embodied as round. The Raines reference does not teach the new features of Claim 18.

Additionally, neither the reference to Trott nor the reference to Hutchins et al or that to Jasch discloses a tool with a form-locking element which has a quadrangular cross section.

The Examiner's attention is further respectfully directed to the features of Claim 27. The patent to Trott discloses a device with a collet (10) to attach a saw blade (14), wherein the device has a housing (20) with a plurality of annularly arranged projecting pins (32) to interact with recesses (33) arranged in the saw blade (14) (see Trott, figures 1 and 2 as well as column 4, line 56 to column 5, line 35).

In contrast thereto, new Claim 27 of the patent application discloses a device having a centering element (10) and at least one form-locking element (12) for fastening an axially mountable tool (14) to a drive shaft (16) of a hand-held power tool (28), wherein the tool (14) is drivable in an oscillating manner. The centering element (10) is provided for centering the tool (14) relative to said drive shaft (16) and the form-locking element (12) is provided for defining a rotary position of the tool (14) relative to the drive shaft (16). The form-locking element (12) is located radially outside of the centering element (10) and wherein more than eight form-locking elements (12) are arranged.

The device according to Trott does not disclose to arrange more than eight form-locking elements (32). Thus, the patent to Trott does not teach the new features of Claim 27.

The patent to Hutchins et al discloses a saw blade (10) which could be mounted on different shaped clamps via slots (14) (see Hutchins et al, figures 3 and 4 as well as column 4, lines 9 to 15).

Like the patent to Trott, the Hutchins et al patent does not disclose to arrange more than eight form-locking elements. Therefore, the patent to Hutchins et al does not teach the new features of Claim 27.

Neither the patent to Raines nor the patent to Jasch discloses a device where more than eight form-locking elements are arranged. Accordingly, new Claim 27 should be new over the Raines and Jasch patents.

Claim 30 also defines features which patentably distinguish the present invention from the prior art.

The patent to Raines shows saw blades (16, 46, 56, 66) which could be secured to a shaft (12) of an oscillating saw (10). The saw blades (16, 46, 56, 66) comprise centering means embodied as slots (40, 57, 70) and form-locking elements (44, 60, 72) which are arranged in an end portion of the saw blades (16, 46, 56, 66). This end portion is arranged flat in respect to an adjacent end portion of the saw blade (16, 46, 56, 66) (see Raines, Figures 1, 7, 9 and 10).

Contrary, the new Claim 30 of the patent application claims a tool (14), which comprises a centering element (10) and a form-locking element (12) for axial mounting and fastening onto a drive shaft (16) of a hand-held power tool (28), wherein the drive shaft (16) is drivable in oscillating fashion. The centering element (10) is intended for centering the tool (14) relative to the drive shaft (16) and the form-locking element (12) is intended for defining a rotary position relative to the drive shaft (16). The form-locking element (12) is located radially outside of the centering element (10) and wherein the centering element (10) and

the form-locking element (12) are arranged in a first tool part which is arranged in parallel to a second tool part which is connected to the first tool part via an inclined section.

The Raines patent does not disclose that the first tool part is arranged in parallel to the second tool part. Moreover, it does not disclose that the second tool part is connected to the first tool part via an inclined section.

Thus, the features of Claim 30 are not disclosed in the patent to Raines.

In the patents to Trott, Hutchins et al and Jasch the disclosed saw blades (14, 10 and 50) are embodied as flat tool (see Figure 1 of Trott, Figures 1 and 7 of Hutchins et al and Figures 4, 15 and 16 of Jasch).

Therefore, Claim 30 defines the features which are new over these references as well.

The claims were rejected over the above-discussed references under 35 USC 102(b) as being anticipated. In connection with this, it is believed to be advisable to cite the decision In Re Lindenman Maschinenfabrik GmbH v. American Hoist & Derrick Co., 221 USPQ 481, 485 (Fed. Cir 1984) in which it was stated:

“Anticipation requires the presence in a single prior art reference disclosure of each and every element of the claimed invention, arranged as in the claim.”

Definitely, the references do not disclose each and every element of present invention as defined in claims 1, 18, 27 and 30.

Therefore, it is respectfully submitted that the anticipation rejection of the original claims over the references should be considered as not tenable with respect to Claims 1, 18, 27 and 30 and should be withdrawn.

It is respectfully submitted that the new features of the present invention as defined in Claims 1, 18, 27 and 30 cannot also be considered as obvious from the prior art.

The patent to Raines discloses an attachment assembly which is based on a mechanism where a saw blade (16, 46, 56, 66) is mounted between two round discs (14, 24, 74) to attach the blade (16, 46, 56, 66) to a surgical saw (10). To provide a device where different saw blades (16, 46, 56, 66) could be used the round discs (24, 74) could be mounted in different orientations (see Raines, Figures 11 to 20 and the specification an in particular column 1, lines 34 to 56). For mating of the components of the assembly with each other bosses and apertures (34, 44, 60, 72, 84, 85, 106, 114) are arranged. The Raines references teaches to arrange this bosses and apertures (34, 44, 60, 72, 84, 85,

106, 114) within a tight space to save installation space and therefore weight of the device.

In contrast to the teaching of the Raines reference, is the inventive idea of Claim 1 of the patent application. To obtain a robust and reliable device for securely fastening a tool (14) to a drive shaft (16) a radius (18) which is associated with one position of a form-locking element (12) is eight times as large as a radius (20) of a centering element (10). Due to this dimensions, not only a secure attachment of the tool (14) can be achieved, but also a tool (14) can be provided which is sufficient stiff for a proper working process. Further, a torque transmission with little material stress and simultaneously a more-precise centering of the tool (14) can be attained and a service life of the tool can be extended (see patent application, page 3, lines 6 to 9).

The Raines reference provides no motivation to embody the discs (14, 24, 74) with connection elements (34, 44, 60, 72, 84, 85, 106, 114) which have a arrangement radius which is eight times as large as a radius of a centering element (40, 57, 70). This approach is even contradictory to the teaching of the Raines reference. Raines teaches to use two corresponding discs (14, 24, 74) to mount the saw blade (16, 46, 56, 66) on a shaft (12). These bulky discs (14, 24, 74) are purposefully chosen to attain a device which could not only provide a variable usage of the attachment assembly, but also obtain a stable and secure connection mechanism. Disadvantageously this attachment

assembly is per se very bulky and therefore needs a lot of installation space and leads to a heavy saw (10). To arrange the connection elements (34, 44, 60, 72, 84, 85, 106, 114) even with a greater distance and specifically with a radius which is eight times as large as a radius of the centering element (40, 57, 70) would lead to an even more bulky and heavy device, which is thus very disadvantageous in particular when used with a surgical saw as disclosed in the Raines reference which should be light in weight and small to provide a handy device. Therefore, a person skilled in the art would not consider changing the dimensions of the arrangement. Actually, he would not even consider minimizing a distance between the connection elements (34, 44, 60, 72, 84, 85, 106, 114) and the centering element (40, 57, 70) to get a lighter and place saving construction. Since the teachings of the Raines reference and that of the present Claim 1 are contradictory towards each other, it could not be seen from which aspect of the Raines reference someone skilled in the art should have gained any hint or encouragement at the time the invention was made to construct the attachment assembly as claimed in present Claim 1. Thus, Claim 1 can be seen as being unobvious over the Raines reference.

Similarly to the Raines patent, the patent to Trott teaches a bulky construction to mount a saw blade (14) to a collet (10). No one skilled in the art would consider to arrange disclosed mounting pins (32) with a greater distance or specifically with a radius which is eight times as large as a radius of the centering element (40, and slot in blade 14) because this would lead to an even

more bulky and thus disadvantageous device which would be against the object of the Trott reference which states, that one object is to produce a collet which has a minimal size (see Trott, column 2, lines 65 to 67). Due to the contrariness of the teaching of the device disclosed in the Trott reference and the idea of new Claim 1, this new claim can be considered as being unobvious over the Trott reference.

The patent to Hutchins et al discloses a saw blade (10) which should be mountable to actuators for surgical purposes with different clamp shapes (see Hutchins et al, column 1, lines 6 to 11). As stated in column 1, in lines 14 to 21 of the Hutchins et al reference one of the critical criteria in the business of surgical saws is to get blades with a low blade weight. Hutchins et al teaches to embody slots (14) which interact with the clamps with a great radial width and in a tight distance to the centering means embodied as cutout (18) to obtain this low blade weight. Therefore, it would be contradictory to the teaching of the Hutchins et al reference to arrange the slots (14) with a radius which is eight times as large as a radius of the cutout (18) as it is claimed in new claim 1. Thus, someone skilled in the art would not consider changing the disclosed dimensions of the elements (14, 28) of the Hutchins et al reference and therefore would not find any hint in the disclosure of the Hutchins et al reference which would have led him to the inventive idea of new Claim 1. Therefore, Claim 1 is unobvious over the Hutchins et al reference.

Since in the patent to Jasch no form-locking element which is located radially outside of a centering element (16) is taught and in addition the centering element (16) can be seen as form-locking element, someone skilled in the art could not get any information concerning an arrangement or a distance, respectively, of a radially outward arranged form-locking element in respect to the centering element (16). Thus, new Claim 1 is unobvious over the Jasch reference.

As for Claim 18, none of the patents to Raines, Trott, Hutchins et al and Jasch discloses a tool which has a form-locking element with a quadrangular cross section as claimed in new claim 18.

Even the teaching of the Hutchins et al reference is to use in the case of clamps with rectangular lugs (see Hutchins et al, figure 3 and column 4, lines 9 to 12) slots (14) with different circular sections. This shape is purposefully chosen to provide slots (14) which could also be used with clamps which have round pins (see Hutchins et al, figure 4, and column 4, lines 12 to 15). Further, to embody the slots (14) as quadrangular would be contradictory to the teaching of the Hutchins et al reference, because a round pin would not mate with a quadrangular shape. Thus, an attachment to the clamp with round pins would not be possible, what however is the object of the Hutchins et al reference (see Hutchins et al, column 2, lines 43 to 46). As a result, no one skilled in the art would get any encouragement to embody the slots (14) as rectangular and

therefore it could not be seen from which information someone skilled in the art would have been led to the inventive idea of new Claim 18, which in resume should be seen as being unobvious over the patents to Hutchins et al, Raines, Trott and Jasch.

As for Claim 27, the patents to Raines, Trott, Hutchins et al and Jasch disclose a device where more than eight form-locking elements are arranged as it is claimed in new Claim 27.

Moreover, a person skilled in the art could not get any motivation out of the specifications of the above-mentioned reference which would have led him to the inventive idea of new Claim 27. Thus, new Claim 27 is unobvious over the references to Raines, Trott, Hutchins et al and Jasch.

As for Claim 30, the patents to Raines, Trott, Hutchins et al and Jasch teach to use a flat tool (see Raines, figures 1 and 7 to 10, Trott, figure 1, Hutchins et al, Figure 1, Jasch, Figures 4, 15 and 16). Therefore, they do not disclose that a first tool part is arranged in parallel to a second tool part which is connected to the first tool part via an inclined section.

Moreover, the patent to Trott however teaches that a reciprocating motion should be in a plane aligned with a drive axis (see Trott, column 1, lines 36 to 38) and a flat blade would serve this purpose best (see Trott, column 1,

lines 45 and 49). Therefore, someone skilled in the art would not consider using a saw blade with an included section because this would hinder the preferred orientation of the motion in respect to the drive axis as requested by Trott. Thus, new Claim 30 should be seen as being unobvious over the Trott patent.

The patent to Jasch provides a power tool (10) where a tool (50) can be mounted on a shaft (16) via a centering element (16) or a securing screw (36) (see Jasch, Figures 4, 15 and 16) as well as column 6, line 56 to column 7, line 8).

The advantage of the arrangement of the inclined section according to new Claim 30 is the possibility to create space for the arrangement of a spring (24) and a fastening screw (42) to fasten the tool (14) to the drive shaft (16) (see Figures 1 and 2 of the patent application).

According to the patent to Jasch the tool (50) is provided with a recess (58) to house the screw (36) and the provide an even working surface of the tool (50). Thus, an integration of an inclined section in the tool (50) is not necessary to locate the screw (36) and further, the Jasch reference gives no encouragement to design the tool with a different shape and specifically with an inclined section as claimed in new Claim 30. Thus, someone skilled in the art would not find any hint which would have led him to the inventive idea of new Claim 30 and therefore, new Claim 30 is unobvious over the Jasch patent.

Neither Raines, nor Trott, nor Hutchins et al, nor Jasch teach to use a tool, where the centering element and the form-locking element are arranged in a first tool part which is arranged in parallel to a second tool part which is connected to the first tool part via an inclined section as it is claimed in new Claim 30 and since it could not be seen from which information someone skilled in the art would have gotten encouragement to do so, new Claim 30 should be accounted as being unobvious over the above-mentioned references.

Furthermore, none of the other cited prior art documents to Matthai et al, Evans et al, Nic, Lim, Fischer et al, Goris, Pascaloff and Winter discloses any feature of one of the new Claims 1, 18, 27 and 30. Thus, all new claims should be new and inventive over any reference taken singly as well as any possible combination of the patents to Raines, Trott, Hutchins et al, Jasch, Matthai et al, Evans et al, Nic, Lim, Fischer et al, Goris, Pascaloff and Winter.

As explained hereinabove, the references do not contain any hint, suggestion or motivation for the new features of Claims 1, 18, 27 and 30. In order to arrive at the present invention as defined in these claims, the references have to be fundamentally modified by including in them the new features of these claims, which were first proposed by the applicant. However, it is known that in order to arrive at a claimed invention, by modifying the references the cited art must itself contain a suggestion for such a modification.

This principle has been consistently upheld by the U.S. Court of Customs and Patent Appeals which, for example, held in its decision In Re Randol and Redford (165 USPQ 586) that:

Prior patents are references only for what they clearly disclose or suggest, it is not a proper use of a patent as a reference to modify its structure to one which prior art references do not suggest.

The present invention as defined in Claim 1, 18, 27 and 30 should be considered as patentably distinguishing over the art and should be allowed.

As for the dependent claims, they should be allowed as well.

Reconsideration and allowance of the present application is most respectfully requested.

Should the Examiner require or consider it advisable that the specification, claims and/or drawings be further amended or corrected in formal respects in order to place this case in condition for final allowance, then it is respectfully requested that such amendments or corrections be carried out by Examiner's Amendment, and the case be passed to issue. Alternatively, should

the Examiner feel that a personal discussion might be helpful in advancing this case to allowance; he is invited to telephone the undersigned (at 631-549-4700).

Respectfully submitted,

A handwritten signature in black ink, appearing to read 'Michael J. Striker', written over the printed name.

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